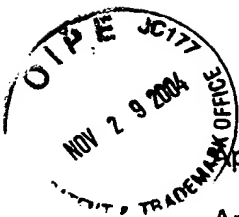


PATENT  
0879-0242P



IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: MISAWA, Takeshi Conf.: 9612  
Appl. No.: 09/432,087 Group: 2835  
Filed: November 2, 1999 Examiner: A. VORTMAN  
For: ARRANGEMENT OF CARD SLOT IN LAPTOP  
COMPUTER

**DECLARATION OF PRIOR INVENTION IN A WTO MEMBER COUNTRY TO OVERCOME  
A CITED PATENT PURSUANT TO 37 C.F.R. § 1.131**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

I, the signer of the present declaration, hereby declare as follows:

1. That I am the sole inventor of the present application.
2. That I am presenting this declaration to establish completion of the invention of the present application in the United States, at a date prior to August 12, 1998, that is the effective date of the prior art, United States Patent 6,417,884 to Chang et al. that was cited by the Examiner in the Official Action dated June 28, 2004, in the above-identified application.
3. That in order to establish the date of completion of the invention of this application, the following attached documents are submitted as evidence:
  - (a) Exhibit: Six pages of the invention description, in Japanese, that was prepared at least as early as August 12, 1998, together with a translation thereof.
4. That I invented the invention recited in the claims of the present application and provided the above Japanese Exhibit to my company's Patent Department at least as early as August 12, 1998 (the effective date of Chang et al.). That since the present application was filed in Japan on November 2, 1998, and since I was working with my

Serial No. -

Japanese Patent Attorney during the operative period to finalize this application for filing, there has been diligence during period from the preparation of the invention description until November 2, 1998, the date my application was first filed internationally.

As can be seen from these attached documents, the invention in this application was made at least by August 12, 1998, which is a date earlier than the effective date of the Chang et al. reference.

I hereby declare that all statements made herein of my own knowledge are true or believed to be true; that all statements made on information and belief are believed to be true; and further that these statements are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the application or any patent issued thereon.

5. Signature:

Inventors:

Full name of first inventor: Takeshi MISAWA

Inventor's signature Takeshi Misawa

Date November 10, 2004 Citizenship: Japanese

Residence: 11-46, Senzui 3-chome, Asaka-shi, Saitama, Japan

Post Office Address: 11-46, Senzui 3-chome, Asaka-shi, Saitama, Japan

発明開示書
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作成者:職場 電開 K1 氏名 三沢 岳志

## \* 1. 発明の名称

ノート型パーソナルコンピュータ

## \* 2. 発明の技術分野

ノート型パーソナルコンピュータのPCカードスロットに関する。

## \* 3. 従来技術とその欠点（他社特許、文献についてはコピー添付）

引用例	番号等	出願人	備考
1	特開平 8-153175	キヤノン株式会社	
2	特開平 9-246879	I.B.M.CO.,Ltd..	
3			
4			

（本発明と従来技術の相違）

※(ノート\*(パーソナル\*コンピュータ+パソコン)\*PC\*カード\*スロット\*(蓋+ディスプレイ)で検索した 305 件を検討したが、類似のものはなかった。

従来から、ノート型パソコンのPCスロットはキーボードが収納される本体部分に設けられるのが一般的であった。しかし、近年ノート型パソコンが小型化するにつれ、キーボード付近のPCカードスロットでは、差すカードにより邪魔になる場合が多くなってきた。

また引用例 1 に示すように、従来はPCカードスロットを使ったカメラを作った場合、固定が難しかったり、無線モデムを引用例 2 に示すように内蔵するしか手がなかった。

## \* 4. 発明が解決しようとする課題

ノート型パソコンにおいて、PCスロットに差すカード類が出っ張っていたり、ケーブルが付属していても邪魔にならないようにする。

## \* 5. 課題を解決するための手段

ノート型パソコンの蓋（ディスプレイ）部分にPCカードスロットを設ける。

## \* 6 a. 実施例

ノートパソコンの一般的な例を示す。

通常ノートパソコンは、キーボード、ハードディスク、トラックボールやタッチパッドやスティックなどのポインティングデバイス、CPUなどが収納される本体部分と、液晶などのディスプレイやスイッチなどが収納される蓋部分に分かれ、これらを開閉自在な接続部分で接続している構造になっている。使用時は開いて使用でき、収納時はたたむようになっている。

このようなノートパソコンでは本体のキーボード下の部分にPCカードスロットが収納されるのが一般的であった。

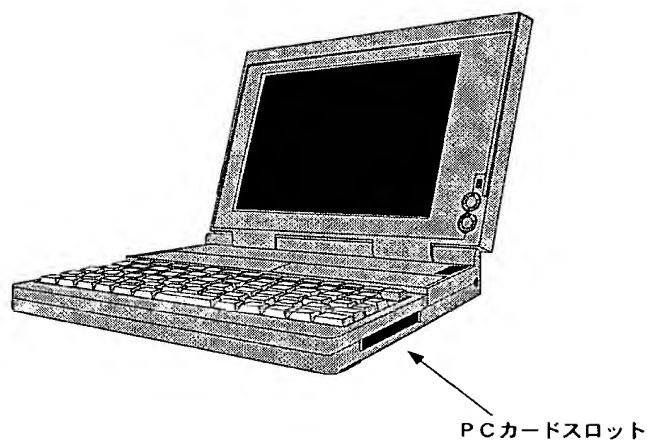


図1：ノートパソコンの一般的な図

このようなノートパソコンでは、次の図のようにアンテナなどがついた通信用カードをスロットに差すと手に当たってしまい、大変使いにくい。

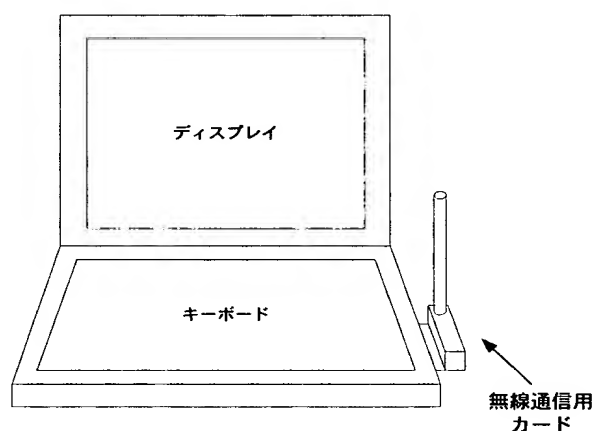


図2：通信用カードを差した例

また、次の図のようにPCカードタイプのデジタルカメラを差したとしても、手の陰になってしまって使いにくくなってしまい、例えばPC-TV会議などはできなくなってしまう。

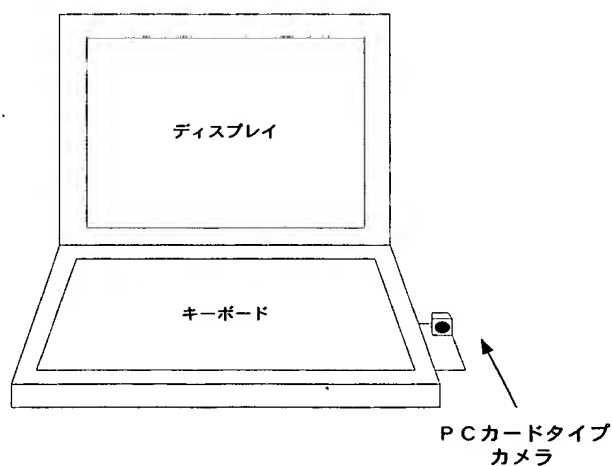


図3：PCカードタイプカメラを差した例

そこで、PCカードスロットを蓋の部分に配置したノート型パーソナルコンピュータを考えた。

次の図は、PCカードスロットを蓋部上部に取り付けた例である。この図では、上部中央に配置してあるが、中央部のみでなくどこでも配置可能である。

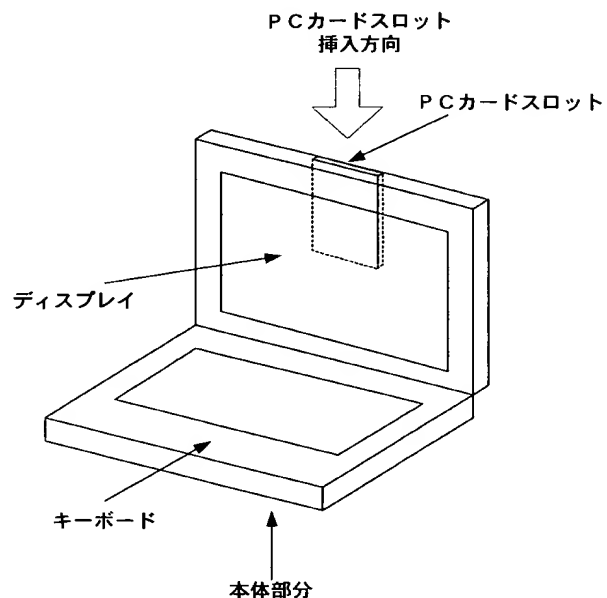


図4：PCカードスロットを蓋部分上に配置したノート型パーソナルコンピュータ

また蓋部に対して、ディスプレイが小さい場合はディスプレイ横部に配置して、蓋部を薄くすることもできる。もちろん、この場合も左右どちらでも良いが、右利きの人が多いことを考えると右側が望ましい。

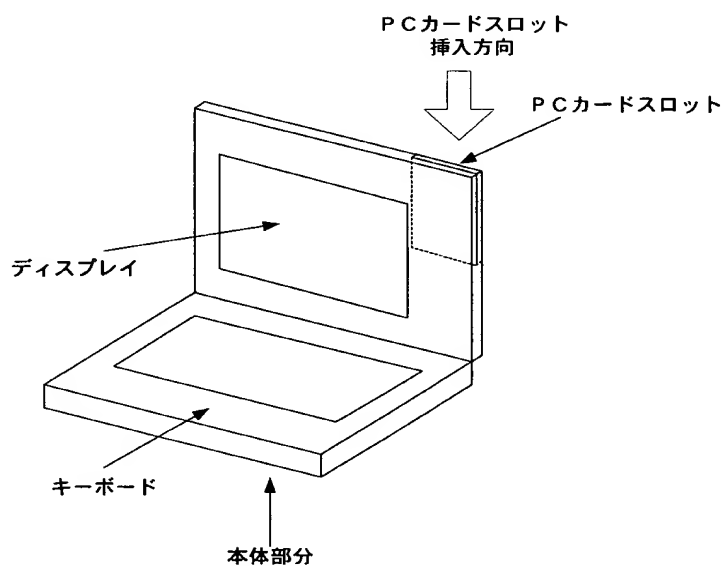


図4：PCカードスロットを蓋部分上に配置したノート型パーソナルコンピュータ  
(PCカードスロットとディスプレイをずらして配置した例)

次の図は、PCカードスロットを蓋部横に取り付けた例である。この図では、右部に配置してあるが、右部のみでなく左でもよいし、横のどの位置でも配置可能である。また、図示しないが上部の時と同じようにディスプレイとずらして配置し、蓋部を薄くすることもできる。

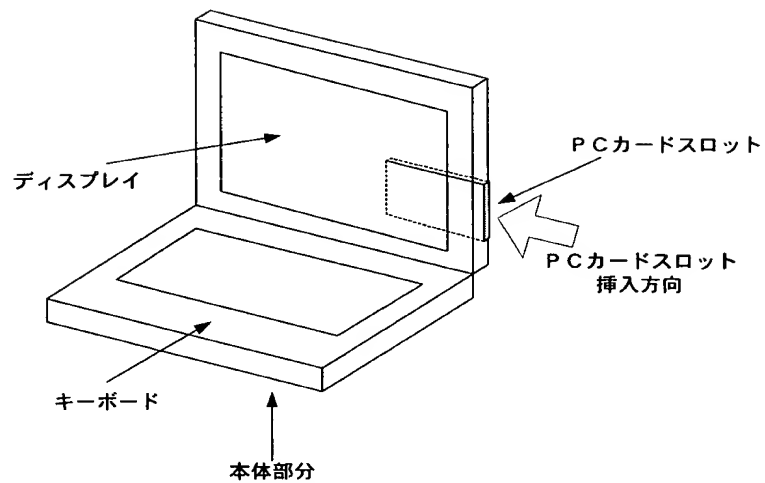


図5：PCカードスロットを蓋部分横に配置したノート型パーソナルコンピュータ  
(PCカードスロットとディスプレイをずらして配置した例)

このようにPCカードスロットを配置すると、アンテナなどがついた通信用カードは、電波をもっとも送受信しやすい位置に配置することができる。

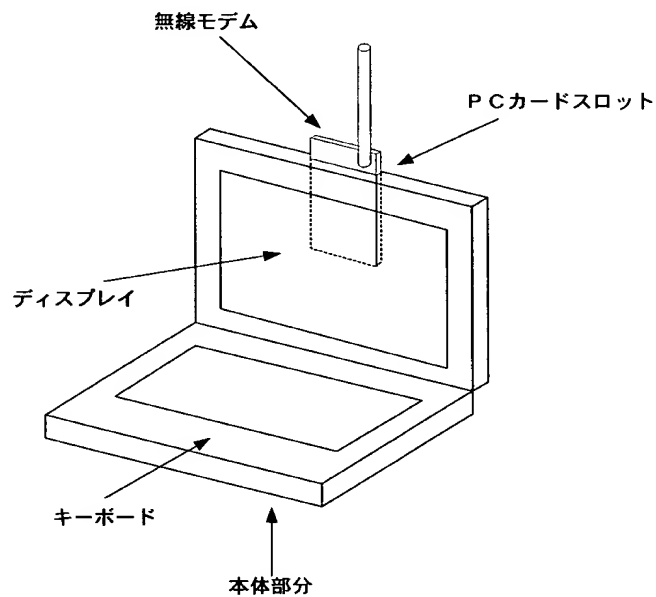


図6：通信用カードを蓋部分上に設けたカードスロットに差した例

また、PCカードカメラも上部あるいは横部に取り付けることで、操作する人間をより撮影しやすくなる。

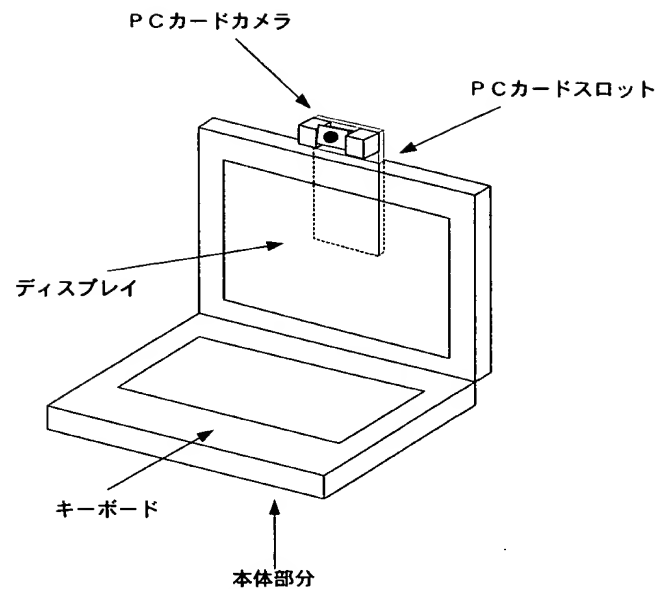


図7：PCカードカメラを蓋部分上に設けたカードスロットに差した例

#### 6 b. その他の実施例

ディスプレイ背の部分に設けたPCカードスロットにおいて、切り欠きを設けることでPCカードが見えるようになり、今何のカードが入っているかがすぐにわかるようになる。

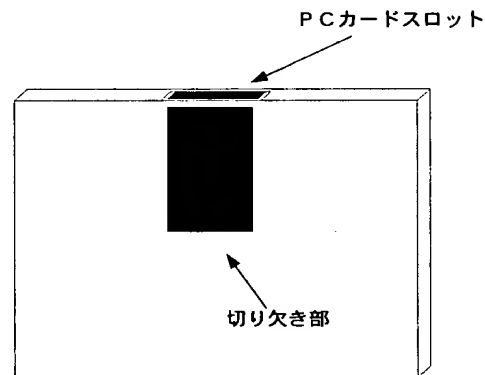


図8：PCカード部分に切り欠きを設けた例

切り欠き部ではなく、透明窓でも良い。

また、切り欠き部の場合は、PCカード型PDAを入れた場合に直接ディスプレイが見えたり操作できたりするというメリットもある。

#### \* 7 a. 発明の効果

本発明により、ノート型パソコンにおいて、PCスロットに差すカード類が出っ張っていたり、ケーブルが付属していても邪魔にならない、使いやすいPCカードスロットを備えたノート型パソコンが実現できる。

#### 7 b. 発明の予期せざる効果

7 c. 実施例に特有の効果

8 a. 特許請求の範囲

8 b. 特許請求の範囲を規定する各技術的手段に関する段階的記載

9. 図面の簡単な説明



Addressee: Intellectual Property Division

Invention Disclosure Document
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Author: Post DENKAI K1 Name MISAWA, Takeshi

**\*1. Title of the Invention**

Notebook-type Personal Computer

**\*2. Technical Field of the Invention**

The invention relates to a PC card slot of a notebook-type personal computer.

**\*3. Conventional Art and Defects thereof (as to third parties' patent documents and references, copies are attached)**

Reference	No. etc.	Applicant	Remark
1	Japanese Patent Application Publication No. 8-153175	CANON Inc.	
2	Japanese Patent Application Publication No. 9-246879	I.B.M. CO., Ltd.	
3			
4			

(difference between the present invention and conventional art)

\*350 results of search (KEYWORD: note\*(personal\*computer+ personal computer)\*PC\*card\*slot\*(lid+ display)) were analyzed, but similar art was not found.

Up to now, it is usual that a PC slot of a notebook-type personal computer is provided in a main body part in which a keyboard is installed. However, in recent years, notebook-type personal computers have been reduced in size. So, if a PC card slot is provided near the keyboard, a PC card often becomes an obstacle while the PC card is inserted into the PC card slot.

Moreover, in a conventional art as shown in the reference 1, a camera connected to a PC card inserted into a PC card slot is hard to fix. To avoid a problem like this, a wireless communication modem must be incorporated in the computer as shown in the reference 2.

**\*4. Problem to be Solved by the Invention**

To provide a notebook-type personal computer equipped with an easy-to-use PC card slot even if cards and the like inserted into the PC slot are protruded, or even if cable is connected.

**\*5. Means for Solving Problem**

Providing a PC card slot in the lid (display) part of a notebook-type personal computer.

**\*6a. Embodiment**

An ordinary example of notebook-type personal computer is shown.

Usually, a notebook-type personal computer comprises a body part in which a keyboard, a hard disk, pointing devices such as a trackball, a touch pad, and a stick and the like, CPU, etc. are accommodated, a lid part in which a display like liquid crystal display and switches are accommodated. These parts are connected via a connection part which can be freely opened and closed. A user can open and use the computer when using, and can fold it when not using.

In the notebook-type personal computer like this, it is usual that a PC card slot is provided under the keyboard in the main body.

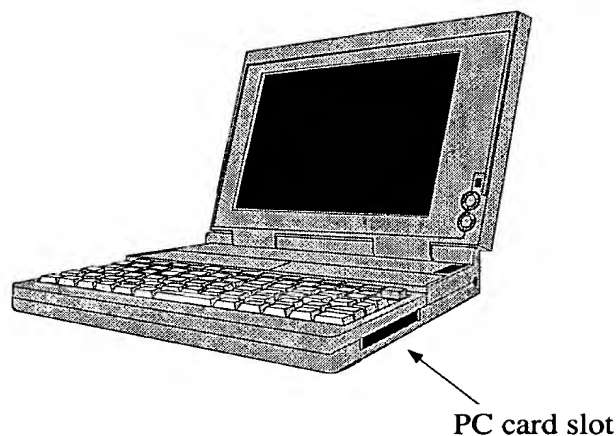


Fig. 1: an example of an ordinary notebook-type personal computer

In the notebook-type personal computer like this, as shown in a following figure, while a communication card with an antenna etc. is inserted into a slot, the card and the antenna often hit a user's hands. So, it is very inconvenient to use.

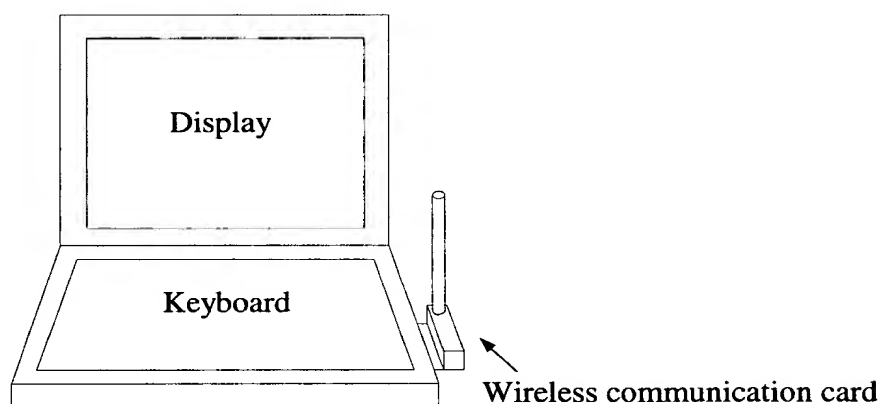


Fig. 2: an example of a notebook-type personal computer in which a wireless communication card inserted

Moreover, if a PC card type digital camera is inserted, it is inconvenient to use because the camera is behind a user's hands. As a result, for example, it is not useful for PC-TV meeting.

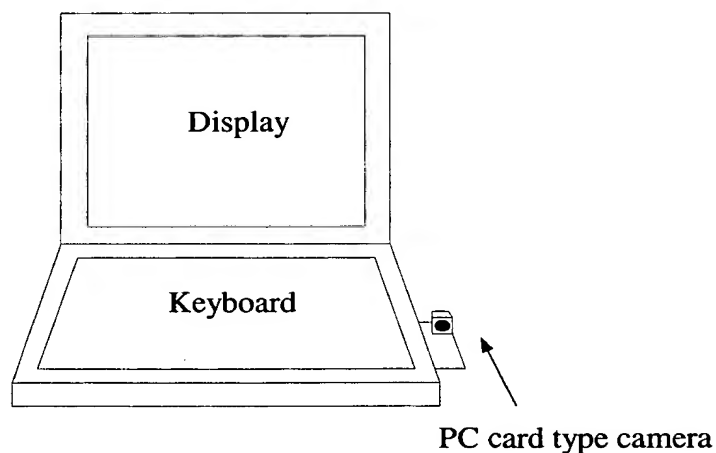


Fig. 3: an example in which a PC card type camera is inserted  
So, a notebook-type personal computer in which a PC card slot is provided in the lid part is devised.

Following figure is an example in which a PC card slot is provided in an upper part of the lid part. Though the PC card slot is provided in a center of the upper part in this figure, the PC card slot may be provided not only in a center part but everywhere in the lid part.

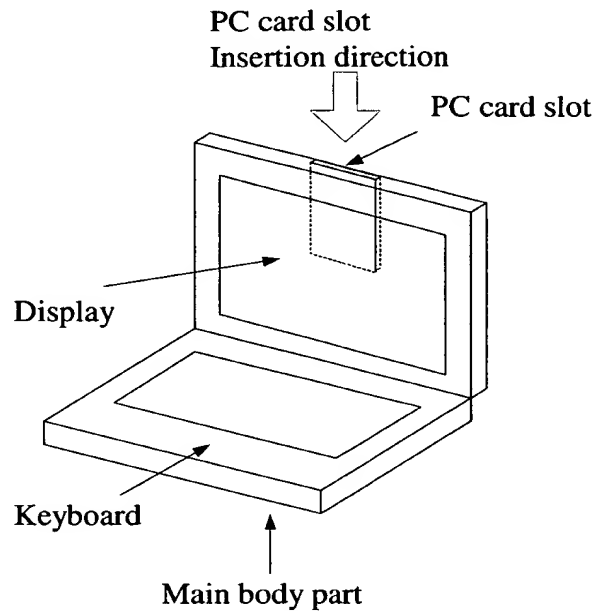


Fig. 4: a notebook-type personal computer with a PC card slot provided in an upper part of the lid part

When the display is too smaller than the lid part, a PC card slot may be provided in a side of the display so that the lid part can be thin. Needless to say, the PC slot may be provided in right side or left side in this case. However, consider the fact that right-handed persons are the majority of people, the right side is preferable.

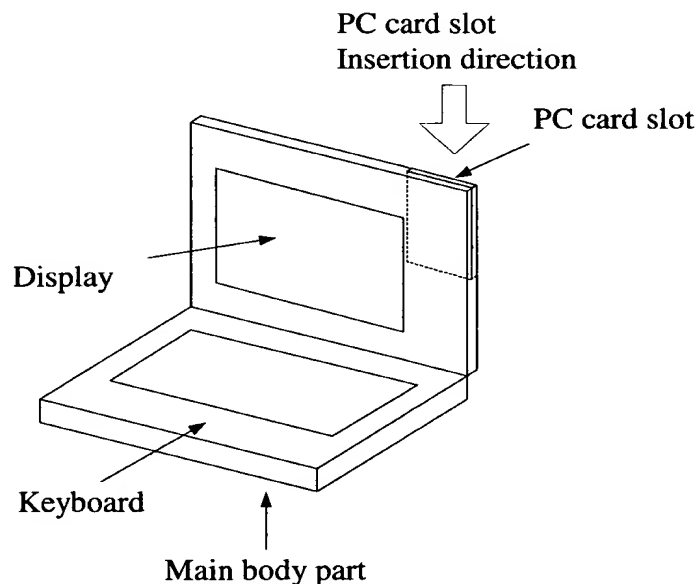


Fig. 4: a notebook-type personal computer in which a PC card slot is provided in an upper side of the lid part (an example in which PC card slot and the Display are arranged not to overlap each other)

Following figure is an example in which a PC card slot is provided in the side of the lid part. Though the PC card slot is arranged in the right side in this figure, arrangement of the PC card slot is not limited to the right side but may be arranged in the left side. Moreover, the PC card slot may be arranged everywhere

in the side part. Furthermore, though it is not shown, the PC card slot may be arranged not to overlap with the display as in the case the PC card slot is provided in the upper part, and thereby the lid part can be thin.

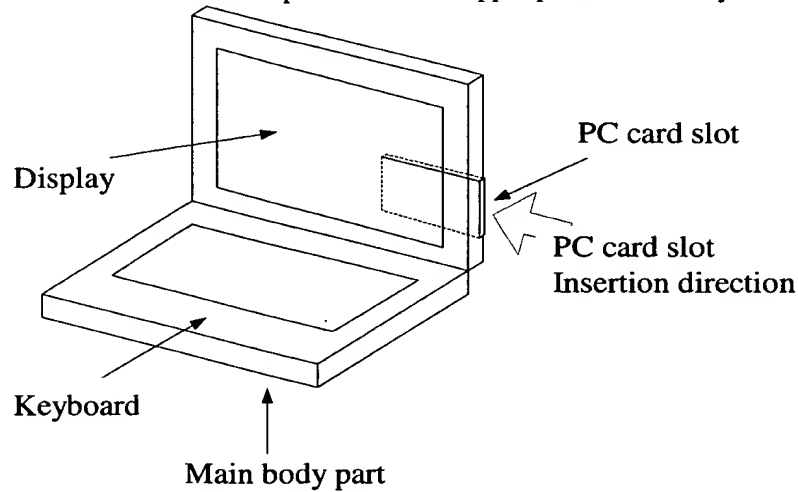


Fig. 5: a notebook-type personal computer in which a PC card slot is provided in a side of a lid part (an example in which a PC card slot and a display are arranged at different area)

If a PC card slot is arranged like this, a communication card with an antenna and the like can be arranged at the best position for transmitting/receiving of radio wave.

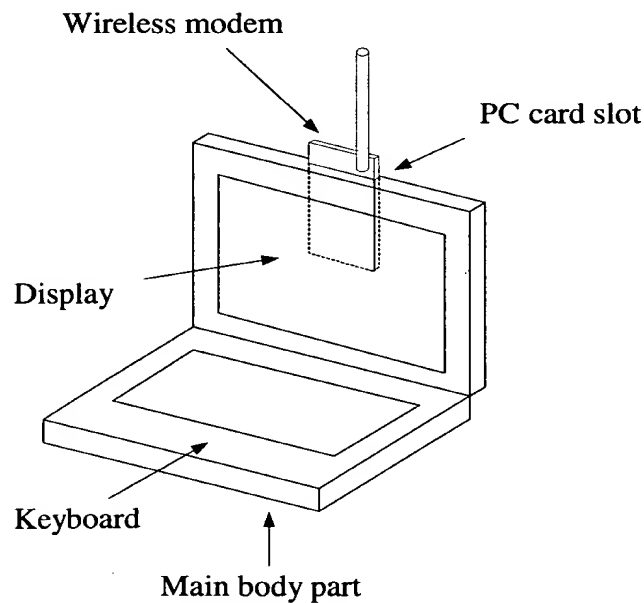


Fig. 6: an example in which a communication card is inserted into a card slot provided in an upper part of a lid part

Similarly, by installing a PC card camera in the upper part or the side part of the lid part, an operator can easily be taken a picture of himself.

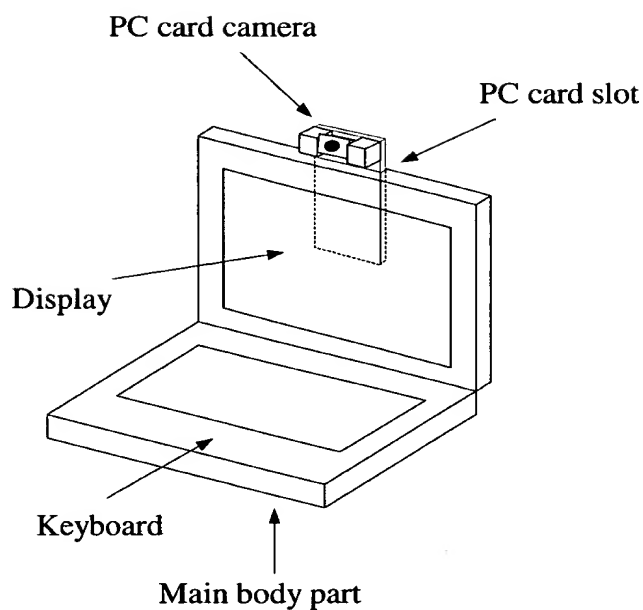


Fig. 7: an example in which a PC card camera is inserted into a card slot provided at upper part of a lid part

#### \*6b. Another Embodiment

When providing a PC card slot in a back side of the display, a PC card can be seen by providing a cutout part, and it can be immediately known what card is inserted now.

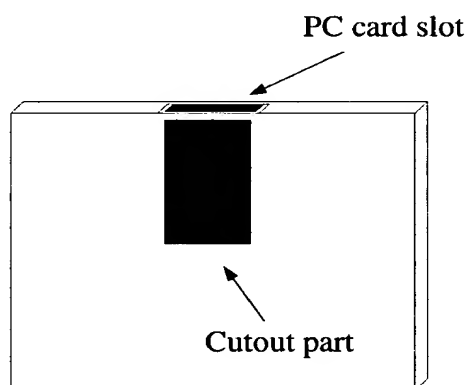


Fig. 8: an example in which a cutout part is provided in an area of the PC card

As a substitute for the cutout part, a transparent window is also preferable.

Additionally, there is a merit when providing the cutout part. That is, when a PC card type PDA is inserted, a display of the PDA can be directly seen and operable.

#### \*7a. Effect of the Invention

According to the present invention, a notebook-type personal computer equipped with an easy-to-use PC card slot is provided. In the notebook-type personal computer, even if cards and the like inserted into a PC slot are protruded, or even if cable is connected, they are not obstructive.

#### 7b. Unexpected Effect of the Invention

7c. Special Effect of the Embodiment

8a. Scope of the Patent Claim

8b. Phased Description of Technical Means for Determining the Scope of the Patent Claim

9. Brief Description of the Drawings